

Application No. 10/783,208
Amendment dated August 25, 2004
Reply to Office Action of July 28, 2004

Amendments to the Claims:

This listing will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Original) A plot planter comprising:
 - a) a top valve including a sliding block movable between a first block position and a second block position, said sliding block having a first seed chamber adapted to receive a first type of seed and a second seed chamber adapted to receive a second type of seed;
 - b) a first finger pickup unit communicating with said first seed chamber when said sliding block is in said first position and a second finger pickup unit communicating with said second seed chamber when said sliding block is in said second position;
 - c) a bottom valve having a first position allowing seed from said first pickup unit to be delivered to a seed tube for planting while collecting seed from the second finger pickup unit, said bottom valve having a second position allowing seed from said second pickup unit to be delivered to said seed tube for planting while collecting seed from the first finger pickup unit; and
 - d) programmable control means for controlling the timing of shifting of said top valve and said bottom valve.
2. (Original) A plot planter according to claim 1 further comprising a linear actuator to move said sliding block between said first block position and said second block position.
3. (Currently Amended) A plot planter according to claim 2 wherein said linear actuator is powered with one of fluid and mechanical power.
4. (Original) A plot planter according to claim 1 wherein said first finger pickup unit communicates with said first seed chamber through a first loading tube and said second finger pickup unit communicates with said second seed chamber through a second loading tube.
5. (Original) A plot planter according to claim 1 wherein said top valve, first and second finger pickup units and bottom valve are each mounted onto a tubular frame.
6. (Original) A plot planter according to claim 1 wherein said first finger pickup unit and second finger pickup unit are each provided with a plate member to reduce the volume within said pickup units whereby increasing the likelihood that the last seeds remaining in said finger pickup units will be planted.

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7. (Original) A plot planter according to claim 1 wherein said first finger pickup unit and said second finger pickup unit are both driven by a common drive.

8. (Original) A plot planter according to claim 1 further comprising a linear actuator to move said bottom valve between said first position and said second position.

9. (Original) A plot planter according to claim 8 wherein said linear actuator is powered with one of fluid and mechanical power.

10. (Original) A plot planter according to claim 1 wherein said programmable control means further comprises a programmable relay having a sensor to count pulses generated from an encoder wheel.

11. (Original) A plot planter according to claim 10 wherein said first finger pickup unit and said second finger pickup unit are turned by a seed shaft and said encoder wheel is mounted on said seed shaft.

12. (Original) A plot planter according to claim 10 wherein said encoder wheel has a plurality of pins on a face thereof.

13. (Original) A plot planter according to claim 10 wherein said pins are timed with the distance that said plot planter travels whereby when the sensor counts a predetermined number of pins the plant plotter will have moved a known fixed distance and said relay will shift the top valve and bottom valve to cause seed of a different kind to be planted thereafter.

14. (Original) A plot planter according to claim 13 wherein said top valve is shifted first and after a few more counts the bottom valve is shifted.

15. (Original) A plot planter according to claim 10 wherein said relay can be reset to begin counting pins again by actuating a simple switch controlled by an operator of the plot planter.

16. (Original) A plot planter according to claim 10 wherein said encoder wheel has 24 pins thereon and said planter travels $1/24^{\text{th}}$ of a revolution of said encoder wheel when said planter travels 2.5 inches.

17. (Currently Amended) A plot planter according to claim 1 wherein said programmable control means can be programmed to precisely control the spacing between individual seeds of a first seed type being planted and the length of a row of a said first seed type before the top valve and bottom valve are shifted to plant ~~and~~ said second seed type.

18. (Currently Amended) A plot planter according to claim 1 wherein said second ~~value~~ valve further comprises a container to collect excess seeds from the first finger pickup unit and the second finger pickup unit when such seed are being collected and not planted.

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19. (Currently Amended) A plot planter according to claim 18 wherein said container is of sufficient volume to hold several seeds from several plots with excess seeds.

20. (Original) A plot planter according to claim 1 further comprising a funnel to facilitate loading of seeds into said first seed chamber and said second seed chamber.

21. (Original) A plot planter according to claim 1 wherein when said sliding block is moved to a position intermediate said first block position and said second block position, there is no communication between said top valve and either of said first finger pickup unit and said second finger pickup unit.